Volunteer Lake Assessment Program Individual Lake Reports

GREGG LAKE, ANTRIM, NH

MORPHOMETRIC DATA

Watershed Area (Ac.):	2,944	**Max. Depth (m):**	11	**Flushing Rate (yr^{1})**	1.6
Surface Area (Ac.):	195	**Mean Depth (m):**	5.3	**P Retention Coef:**	0.57
Shore Length (m):	6,400	**Volume (m^{3}):**	4,199,000	**Elevation (ft):**	1053

TROPHIC CLASSIFICATION

Year	Trophic class
1978	OLIGOTROPHIC
1994	OLIGOTROPHIC

KNOWN EXOTIC SPECIES

The Waterbody Report Card tables are generated from the 2012 305(b) report on the status of N.H. waters, and are based on data collected from 2001-2011.

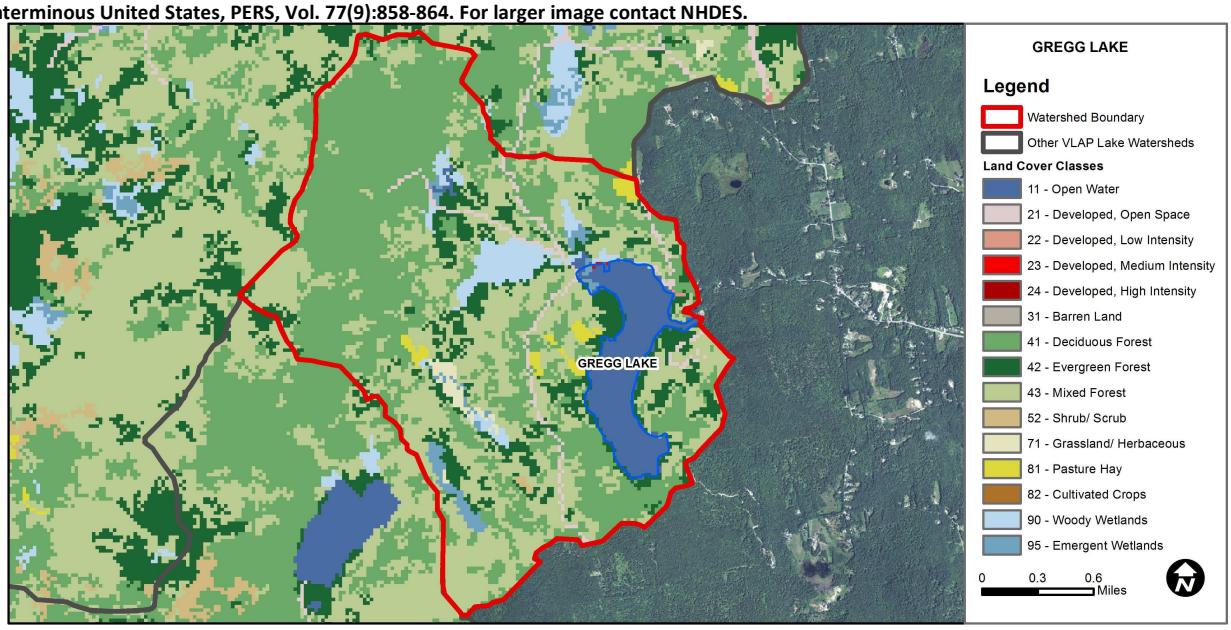
Designated Use	Parameter	Category	Comments
Aquatic Life	Phosphorus (Total)	Slightly Bad	>/=5 samples and median is >threshold.
	pH	Bad	>10%, with a minimum of 2, samples exceed criteria, with 1 or more by a large margin.
	D.O. (mg/L)	Encouraging	< 10 samples and no exceedance of criteria. More data needed.
	D.O. (% sat)	Cautionary	< 10 samples and 1 exceedance of criteria. More data needed.
	Chlorophyll-a	Slightly Bad	>5 samples and median is > threshold.
Primary Contact Recreation	E. coli	Good	Geometric means < criteria; however at least 1 exceedance of the single sample criteria occurred.
	Chlorophyll-a	Encouraging	< 10 samples and no exceedance of criteria. More data needed.

BEACH PRIMARY CONTACT ASSESSMENT STATUS

GREGG LAKE - CAMP CHENOA BEACH	E. coli	Very Good	All bacteria samples <75% of geometric mean criteria, but not enough to calculate geometric mean. Or, all bacteria samples are < single sample criteria and calculated Geometric means are less than geometric mean criteria.
GREGG LAKE - TOWN BEACH	E. coli	Cautionary	One exceedance of single sample criteria but not enough data to calcuate geometric mean. More data needed.

WATERSHED LAND USE SUMMARY

Fry, J., Xian, G., Jin, S., Dewitz, J., Homer, C., Yang, L., Barnes, C., Herold, N., and Wickham, J., 2011. Completion of the 2006 National Land Cover Database for the Conterminous United States, PERS, Vol. 77(9):858-864. For larger image contact NHDES.

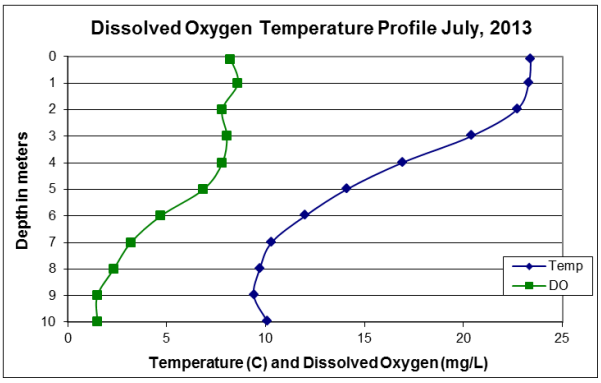


Land Cover Category	% Cover	Land Cover Category	% Cover	Land Cover Category	% Cover
Open Water	7.36	Barren Land	0	Grassland/Herbaceous	0.72
Developed-Open Space	1.97	Deciduous Forest	40.56	Pasture Hay	1.17
Developed-Low Intensity	0.03	Evergreen Forest	10.39	Cultivated Crops	0
Developed-Medium Intensity	0.03	Mixed Forest	33.02	Woody Wetlands	3.25
Developed-High Intensity	0	Shrub-Scrub	0.1	Emergent Wetlands	1.41

VOLUNTEER LAKE ASSESSMENT PROGRAM INDIVIDUAL LAKE REPORTS
GREGG LAKE, ANTRIM, NH
2013 DATA SUMMARY

OBSERVATIONS AND RECOMMENDATIONS (*Refer to Table 1 and Historical Deep Spot Data Graphics)*

- **CHLOROPHYLL-A:** Chlorophyll levels were slightly elevated and greater than the state median in July. Visual inspection of historical data indicates highly variable chlorophyll levels from year to year.
- **CONDUCTIVITY/CHLORIDE:** Conductivity was low at all stations and below the state median. Visual inspection of historical data indicates relatively stable epilimnetic conductivity.
- **E. COLI:** E. coli levels were well below state standards for public beaches and surface waters.
- **TOTAL PHOSPHORUS:** Epilimnetic phosphorus levels were very low and decreased greatly from 2012. Phosphorus levels were low to average at all other stations. Visual inspection of historical data indicates moderately variable epilimnetic phosphorus from year to year.
- **TRANSPARENCY:** Transparency was not measured in 2013; we apologize for the inconvenience.
- **TURBIDITY:** Turbidity was low at all stations.
- **PH:** pH was lower than desirable range 6.5 – 8.0 units at all stations, particularly the Inlet due to wetland influences. Visual inspection of historical data indicates moderately variable epilimnetic pH from year to year.
- **DISSOLVED OXYGEN:** Dissolved oxygen levels were lower than desirable in the Hypolimnion, but recovered to desirable levels in in the metalimnion and epilimnion.
- **RECOMMENDED ACTIONS:** Increase monitoring frequency to three times per summer, typically June, July and August, to better assess seasonal and historical water quality trends and reduce variability. Keep up the great work!



Station	Table 1. 2013 Average Water Quality Data for GREGG LAKE						
	Alk.	Chlor-a	Cond.	E. Coli	Total P	Turb.	pH
	mg/l	ug/l	uS/cm	#/100ml	ug/l	ntu	
Epilimnion	1.20	7.47	19.5		3	0.97	5.48
Metalimnion			23.1		5	0.45	5.52
Hypolimnion			25.8		12	0.73	5.31
Inlet			16.6		13	0.64	4.87
Outlet			20.1		7	0.78	6.07
White Birch Point				10			

NH Median Values: Median values for specific parameters generated from historic lake monitoring data.
Alkalinity: 4.9 mg/L
Chlorophyll-a: 4.58 mg/m^3
Conductivity: 40.0 uS/cm
Chloride: 4 mg/L
Total Phosphorus: 12 ug/L
Transparency: 3.2 m
pH: 6.6

NH Water Quality Standards: Numeric criteria for specific parameters. Results exceeding criteria are considered a water quality violation.
Chloride: < 230 mg/L (chronic)
E. coli: > 88 cts/100 mL – public beach
E. coli: > 406 cts/100 mL – surface waters
Turbidity: > 10 NTU above natural level
pH: 6.5-8.0 (unless naturally occurring)

HISTORICAL WATER QUALITY TREND ANALYSIS

Parameter	Trend	Explanation	Parameter	Trend	Explanation
pH	N/A	Ten consecutive years of data necessary.	Chlorophyll-a	N/A	Ten consecutive years of data necessary.
Conductivity	N/A	Ten consecutive years of data necessary.	Transparency	N/A	Ten consecutive years of data necessary.
			Phosphorus (epilimnion)	N/A	Ten consecutive years of data necessary.